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turn it round; and I find that in some plants of this species the upper section is dextrorsely spiral, and the lower section sinistrorsely, whilst in other plants these relations are reversed. Thus we have didromy within each plant of *Vallisneria* and antidromy between neighboring plants.

It would be dangerous at this stage to attempt generalizations as to the cyptogams. I may be permitted, however, to call attention to a few points. In the Atlases of Vegetable Palaeontology, by Schimper, Zeiler, Lesquereux and others, some of the figures of Carboniferous Acrogens, as Lepidodendron, Ulodendron, cones of Lepidostrobus, indicate a trend to one side which would indicate antidromy if others be found trending to the other side. The photograph of *Lepidodendron lycopodioides* in Plate LXX. of Zeiler's Atlas, does give a contrary spiral to that in Schimper's plates, but Zeiler's photograph may have been reversed in the process. The segments of apical cells of Hepaticae and Pteridophytes seem to indicate in some cases a direct or 'clock-wise' order of appearance, and in other cases a reverse order; but I do not know whether they may not vary in the same individual plant, or whether, on the other hand, they may not be homodromic in the totality of a species. I have been unable to find any variation of phyllotaxy in *Lycopodium* and allied forms, the great bilateral symmetry of the leafy axis obscuring the traces that might exist. But in two specimens of the tree-fern *Alsophila* the common phyllotaxy of $\frac{2}{5}$ can be made out at the apex of the stem; in both our Princeton specimens the spirality is dextrorse (that is, after the course of the thread of a common screw). If anybody can produce a specimen with sinistrorse phyllotaxy, he will thereby furnish the lacking evidentiary fact, and complete the proof of the antidromy of the ferns.

Botanical Notes.

Two new botanical Serials. One of our esteemed contemporaries has recently expressed some irritation on learning of the founding of a new serial publication. The number of opportunities for the publication of botanical papers is indeed great, but the supply of matter evidently exceeds the space provided, for we very seldom learn that any journal has suspended printing, and most of them have had such pressure brought upon their space that they have been obliged to increase their number of pages. The " Journal of Botany" is indeed an exception to the general rule, having continued about the same annual dimensions for a long time.

The new channels of publication are both German. The Berlin Botanical Garden began in January to issue its " Notizblatt des Königlichen botanischen Gartens und Museums zu Berlin," proposing to distribute it at irregular intervals as matter becomes available. The first number bears date January 2d, the second June 5th. They contain much interesting information on species grown in the Garden, on additions to the Museum, and numerous descriptions of new species in the Herbarium contributed by Engler, Urban, Gurke, Schumann and Gilg.

The " Allgemeine botanische Zeitschrift, für Systematik, Floristik, Pflanzengeographie, etc.," was also commenced in January and is published monthly at Karlsruhe, under the editorship of A. Kneucker. It is a general botanical journal, containing besides original communications, reviews, notes on literature and on institutions, societies, exsiccatae and explorations. N. L. B.

Compound Leaves in Rubus odoratus. The leaves of this species are always described as simple. A student of mine, Mr. Millett Thomson, has just shown me, from a plant in his garden, that the leaf with its long petiole first falls, leaving a short stub or main petiole behind, which is itself later deciduous. This, it will be recalled, is something like what happens in the Japanese Ampelopsis, except that there the leaf is sessile on a long petiole, which falls after the blade itself has separated. Both of these plants then have unifoliolate leaves. W. WHITMAN BAILEY.

Sisymbrium altissimum Linn. in Minnesota. Mr. L. H. Dewey has called attention, in a recent number of the BULLETIN, to the occurrence of *Sisymbrium altissimum* Linn. in the side streets of Minneapolis.

This plant has been previously reported from Minnesota localities. The Minneapolis Daily Tribune of September 22, 1894, contains an account of my discovery of this species near Minneapolis. Since the first introduction of a few straggling specimens, the plant has spread so as to become a nuisance in the elevator districts on the outskirts of Minneapolis and St. Paul. Specimens have been found also in several other localities in Hennepin, Ramsey and Dakota counties. EDMUND P. SHELDON.

MINNEAPOLIS, MINN., Nov. 12, 1895.

I found this plant in considerable quantities along the railroad at Port Arthur, Lake Superior, in September, 1889. We also have a specimen of it collected at Danville, Quebec, in 1894.

N. L. BRITTON.

Reviews.

Synoptical Flora of North America: Vol. I. Part I. Fascicle I. Polypetalae from the Ranunculaceae to the Frankeniaceae. By Asa Gray, LL. D., and Sereno Watson, Ph. D., continued and edited by Benjamin Lincoln Robinson, Ph. D. (Issued October 10, 1895.)

The second volume of this work was published some years since, in two parts, the first part appearing in the year 1884, while the second was issued in 1878. In 1886 a revised edition of these two parts with an appendix of additions and corrections was issued by the Smithsonian Institution. The first fascicle of part I., volume I., has now been issued from the University press at Cambridge after a lapse of eleven years. Dr. Robinson is to be congratulated on the completion of the pages under consideration and we are promised a second fascicle in the near future. The bulk of the matter was written by Dr. Gray; Dr. Watson subsequently took up the work and continued it until his death; since then Dr. Robinson has completed parts left unfinished by the other authors, besides editing their manuscripts by bringing together facts of recent discovery, mostly in the form of foot-notes.

The pages contain a vast amount of useful and valuable information and the book will be welcomed by everyone. Together with the many good qualities of this issue appear the same faults that characterize the second volume. After a general key to the families, the Ranunculaceae are taken up, and other families fol-